

III. THE SHORT, TROUBLED HISTORY OF NATURAL GAS TRADING

Physical markets provide the context for financial markets; they do not explain the behavior of those markets. Factors that make markets vulnerable to a narrow range of strictly manipulative behaviors, like corners and squeezes, also make them vulnerable to a broader range of suspicious activities identified in the literature as abusive – front running, wash trading, rumor mongering, etc. Also, they make markets prone to volatility and, under some conditions subject to upward pressures on prices. The characteristics of energy markets make it easy for traders to exploit physical problems. Under these circumstances, the lack of transparency and oversight in the natural gas commodity markets is an open invitation to behavior that makes matters worse.

Given the vulnerability of the market, it is not surprising to see a price spiral. The history of trading in energy commodities, especially natural gas, has been wild and painful, to say the least. The behavior of this market gives rise to a pervasive suspicion, which is well justified. What has been documented has been limited to written complaints settled at the Commodities Futures Trading Commission (CFTC) or in federal court cases. While regulators and law enforcement scramble to catch up, consumers pay the inflated price. Catching abuse after the fact is not enough. Energy commodity markets need more transparency and more oversight so that problems can be prevented.

A. ACT ONE: PLANTING THE SEEDS OF DYSFUNCTION

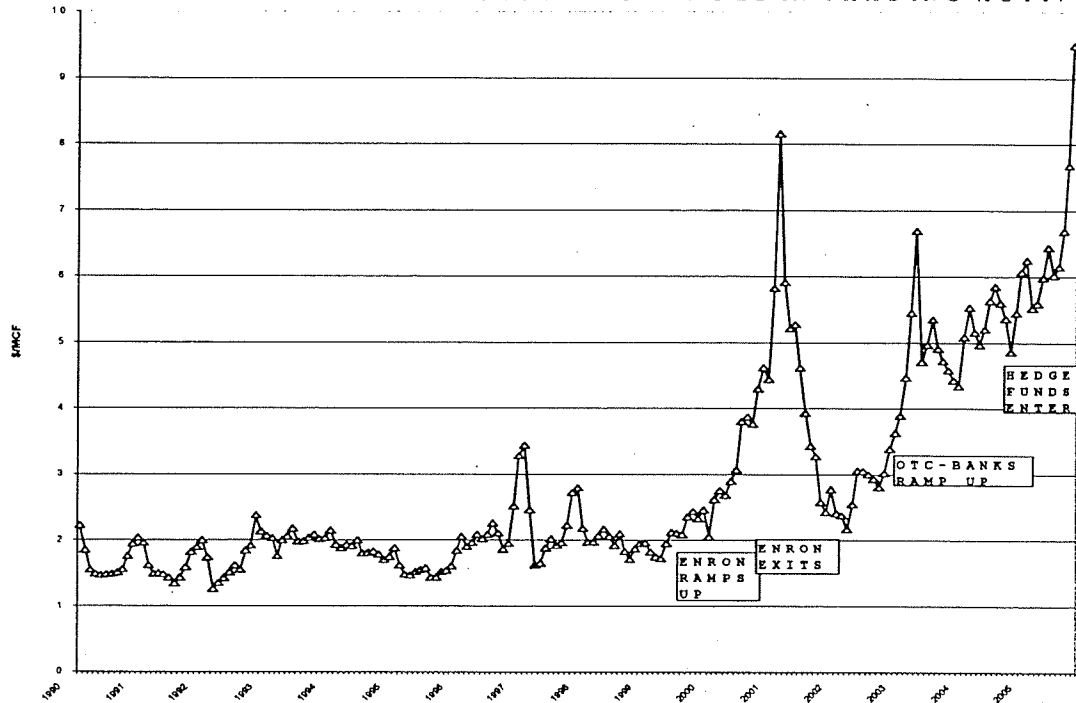
1. Trading Spins Out of Control

The setting of wholesale natural gas prices through trading in commodity markets is a recent phenomenon. The first natural gas market center, known as the Henry Hub, was set up in 1988, soon after deregulation of “old gas” in 1985. Hubs are locations where natural gas pipelines meet and the services necessary to physically exchange natural gas are located for traders who want to take delivery. The wellhead price of natural gas was not fully decontrolled until 1989. Early in 1990, the first natural gas futures were traded on the New York Mercantile Exchange (NYMEX).

A close look at the timing of the changes in trading activities and the movement of prices shows a coincidence that is just too striking to ignore. Exhibit III-1 overlays key points in the short history of natural gas commodity markets on the price history.

Natural gas prices were stable throughout the 1990s. While there were a couple of spikes in spot markets in the 1990s, spot and futures prices generally tracked the wellhead price closely in a narrow range of \$2 - \$3 per thousand cubic feet (mcf). After a slow start, these markets were said to be efficient in a technical sense.¹

EXHIBIT III-1: WELLHEAD PRICES AND CHANGES IN TRADING ACTIVITY



Source: Energy Information Administration, *Natural Gas Database*.

This pattern came to a dramatic end in the spring of 2000. In the spring of 2000, natural gas prices at the wellhead began a sustained period above \$3 that lasted for 16 months. The average price of natural gas in 2000-2001 was about twice the price of the previous decade. Spot market prices peaked at four times the average of the previous decade. Coincidentally, this was the period in which, it later came to light, a number of companies were manipulating or attempting to manipulate the market. This was the period during which the Enron-style merchant traders engaged in abusive practices.

Electricity deregulation emerged in the mid-1990s while the Federal Energy Regulatory Commission pressed deregulation and unbundling of natural gas pipeline markets, particularly in California. The California electricity crisis, which was interrelated with natural gas prices, had put pressure on these commodity markets.

Simultaneously, Enron launched its Enron Online trading platform in November 1999. It had moderate levels of trading (about \$50 billion) through the first half of 2000. Subsequently, Enron's total trading exploded. In the first half of 2001, it did over ten times as much (half a trillion dollars).² Prices skyrocketed as well. Volumes escalated sharply and Enron played a key role. As a recent *New York Times* article noted, "Some traders have said that Enron Online was dominant enough to enable Enron to set market prices."³

While the Western electricity markets attracted the most headlines and revealed the most blatant abuses in terms of withholding of physical supplies and bogus trades, natural gas

markets were not immune. Enron played a large role in these markets and when it collapsed, so too did much private trading.⁴ A court ruling allowing a lawsuit against Enron for abuse of commodity markets can be used to make the point: “Enron was positioned to yank prices up because its Enron Online [EOL] trading platform controlled fully 40 percent of average daily trading on the Henry Hub natural gas spot market. Further, other traders in that market “routinely looked to EOL and Enron for current [Henry Hub] spot market pricing information,” according to the CFTC complaint.⁵ The Henry Hub is the most important price setting spot market in the nation. This market share of activity by a single entity would virtually ensure that the hub was highly concentrated at that time.

By late-2001, signs of trouble at Enron were evident and trading began to dry up. In December 2001, bankruptcy shut down the platform. Trading did not recover for a period. Prices declined and remained stable.

In February 2002, shortly after Enron declared bankruptcy, UBS took over Enron’s natural gas and power trading operation and Enron Online. With little volatility to trade around, UBS started firing traders and switched off the Internet trading platform. By May 2003, it had closed the Houston operation.⁶

Between the end of 2002 and the beginning of 2005, two dozen companies would settle over thirty CFTC complaints of market manipulation or attempts to manipulate the natural gas market with fines running in excess of \$4 billion. The cases involved:

- the misreporting of information about storage, pipeline capacity and both the quantity and price of natural gas trades;
- abuse of affiliate relations;
- the improper sharing of insider information; and
- manipulation and charging of illegal prices.

These are the trading market abuses. In addition, there are a number of securities violations proven and pending.⁷

2. Public Policy Opens the Door to Abuse

The biggest long-term change in 2000 was not the spike in natural gas prices, however, it was the passage of the Commodity Futures Modernization Act (CFMA). While the CFMA did not change the legality of many of the activities that were taking place, it made it more difficult to detect them and it opened the door to many other types of transactions that raise concerns. As one analyst put it:

What did the Commodity Futures Modernization Act (CFMA) of 2000 do? -

First, let me point out that the over-the-counter market in derivatives has never been adequately regulated. The market emerged only recently, and most of its

growth has occurred in the past fifteen years. At first, this market was largely ignored by regulators, and after it grew to a size that demanded it be addressed, the regulators found it difficult to define the line of jurisdiction over the markets because of poorly written laws and richly endowed political opponents to such regulation.

Before passage of the bill in December 2000, the government retained authority over fraud and manipulation in the over-the-counter derivatives markets. In addition, market participants were restricted under Rule 35 from conducting over-the-counter markets like an exchange.

The CFMA was a major bill that drastically reduced the level of prudential regulation of derivatives markets. It reduced transparency and the government's surveillance abilities over exchange-traded derivatives, and it completely eliminated or "excluded" federal derivatives regulation of the over-the-counter market. Enron operated in that completely deregulated environment.⁸

This concern about the deregulation and lax regulation of natural gas trading markets extends to consumers. For example, in pushing for reform of the Act, the American Public Gas Association argues

"Passage of the Commodity Futures Modernization Act of 2000 has significantly changed natural gas markets. As a result, we believe that the CFTC should be given additional authority to oversee and carefully monitor markets. Given the abuses in energy markets we have seen over the past several years, strong market oversight is more important than ever to protect consumers and ensure that markets are functioning properly."⁹

Large industrial users express similar concerns.

Natural gas traders on the New York Mercantile Exchange (NYMEX) were sharply criticized for "fostering high and volatile natural gas prices at U.S. consumers' expense" by Peter Huntsman, President and CEO of the corporation bearing his name... Mr. Huntsman charged, "hedge funds and other paper traders on the New York Mercantile Exchange continue to enrich themselves while U.S. gas consumers are forced to endure the result of the world's highest and most volatile natural gas prices...."

Mr. Huntsman is "surprised" that more natural gas consumers are not "outraged" over the imbalance in the U.S. economy created by a "natural gas pricing system that has been out of control since Congress enacted the Commodity Futures Modernization Act in 2000."¹⁰

The criticism is not limited to users and their advocates. A similar sentiment was expressed in a 2005 article in the *Journal of Futures Markets*.

Many scholars have recognized the cash-settlement manipulation problem, but few have formally addressed it. The lack of interest may have been due to the fact that, until recently, most U.S. exchange-traded cash settled derivative contracts were based on broad indices of very liquid stocks. Manipulation of such instruments requires very large trades that are costly to make and easy to detect through conventional surveillance.

The prospects for manipulation increased substantially with the passage of the Commodity Futures Modernization Act of 2000 (Act). The Act authorized trading in single-stock futures and narrow-based index instruments, and the Act specifically permitted cash settlements. These new instruments will not necessarily have liquid underlying securities. Further, all else equal, fewer numbers of securities will be easier to manipulate than larger numbers.¹¹

The over-the-counter derivatives market in natural gas is a derivative that rests on a narrow base, whose liquidity at key moments is unclear, and which is subject to no surveillance whatsoever.

The very high prices (by historical standards) of 2000-2001 were not sustained. By the winter of 2002 the national economy was in a recession. The Enron-generation of energy traders was slipping into bankruptcy. The market evaporated in mid-2002 under the suspicions of manipulation and fraudulent accounting.

B. ACT TWO: REAPING THE WHIRLWIND

1. Trading Ramps Up and Prices Follow

The trading aspect of the electricity and natural gas industries quickly returned to the relative safety of trading around assets and marketing activities.¹² These behaviors are derisively called a “flight to quality.”¹³ Perhaps not so coincidentally, prices moderated in 2002, declining by 25 percent on average, but settling about 50 percent higher than the decade of the 1990s. The relationship between crude oil prices and natural gas prices had moved back toward the average of the 1990s.

For some, the collapse of Enron Online and the merchant traders represented a loss, even a crisis.¹⁴ To speculators and traders who believe that everything that can be traded should be, as often as possible, this looks like an alarming situation of illiquidity. By late 2003 the big banks and large speculators began to enter and accelerate trading to deliver the consumer from the doldrums of slow, stable prices.

It appears that trading activity began to revive in late 2003 and price began to lift off again.

Wall Street banks are notoriously fickle about their commitment to commodities trading. But the eye-popping profits earned by the market leaders, Goldman Sachs and Morgan Stanley, have spurred other banks to get into the game. In 2004, Goldman Sachs and Morgan Stanley earned about \$2.6 billion combined from commodities trading, most of that from energy.¹⁵

The massive influx of hedge funds appears to have ramped up in mid-2004 followed by the 2005 skyrocketing of prices.

The new hedge funds are sucking scarce talent away from the banks. At least 450 hedge funds with an estimated \$60 billion in assets are focused on energy and the environment, including 200 devoted exclusively to various energy strategies.¹⁶

In the post-Enron period the rules of entry were relaxed to let more entities into these lightly regulated or unregulated markets.

Some lawmakers and consultants argue the government has done little to shore up the energy markets most susceptible to manipulation. The Federal Reserve relaxed rules in 2003 so that Commercial banks like Citigroup would take possession of physical commodities like oil in storage tanks... The move allowed the banks to serve as dealers in commodity derivatives...

“It is an effort by banks to move into the terrain that Enron abandoned in their bankruptcy...

As early as October 2002, less than a year after Enron declared bankruptcy, the Commodity Futures Trading Commission started to write rules exempting commodity hedge funds from regulatory oversight.¹⁷

Finding detailed data and analyses of the movement of hedge funds and banks into energy trading is difficult, since little official information is gathered, not to mention reported. The following relies on a series of analyses published over the course of a year by UtiliPoint International and Global Change Associates, who announced a “multi-client study on the Hedge Funds entry into energy trading markets” in a note published on July 15, 2004. The numbers track well with other accounts.

After a hiatus of a year or so, the volume of trading increased dramatically and by mid-2004 it had returned to the level reached at the point of the collapse of the Enron generation of traders. This time trading was dominated by a completely new set of players – investment bankers and multinational oil and gas companies. As trading and prices began to mount, the hedge funds moved in. It appears that the number of energy hedge funds increased from about

100 to over 400,¹⁸ and those specializing in energy commodity trading increased from 10 to over 200.¹⁹ The volume of trading in over-the-counter markets has exploded. One estimate of over-the-counter trading through a NYMEX platform shows a sevenfold increase between June 2003 and June 2005.²⁰

While the analysts who hype the energy trading are adamant that this liquidity is good for the markets, they at least admit that it might “accentuate” upward trends. However, their descriptions are a cause for even greater concern.

Hedge funds bring increased sophistication, liquidity, and the risk culture and trading acumen to bear on energy commodities markets. Seeking new opportunities to obtain greater returns, hedge funds see energy markets as providing that opportunity. Likewise, the investment banks have a risk trading culture, deep pockets, and access to both physical and financial traders. Even the energy companies with surviving trading arms are now partnering with investment banks to sustain and improve trading operations while obtaining access to increased expertise, more sophisticated tools, and risk capital. Moreover, we have the multinational oil and gas companies with the balance sheet to put their capital at risk. It is no accident that BP is the No. 1 gas trader and in the top five in power trading. BP has the balance sheet and supply to play in this new financial market.²¹

While analysts debate which approaches are the most profitable for new traders entering the market, there is no doubt that the influx has been massive.

NYMEX gas futures trading underwent a fundamental shift in 2005 as speculators jumped into the market, intent on harvesting big profits from the surge in volatility, several analysts agree.

Peter Fusaro, co-principal of the Energy Hedge Fund Center, said last week that conventional gas traders such as utilities have been sidelined over the past year as speculators have increasingly “financialized” the gas market.

Funds held more than 50% of the open interests in the NYMEX Henry Hub contract at year’s end, Fusaro, said, which he called evidence of “structural change in energy commodity trading.”

He said that, because hedge funds thrive on volatility, the market has become faster-moving – and harder to predict...

And Fusaro said hedge funds’ interest in energy commodities is likely to grow even more in 2006, potentially making trading a riskier proposition as the amount of money changing hands increases at a quicker pace.

Citigroup Global Markets analyst Kyle Cooper agreed with Fusaro that there has been a substantial shift in the market due largely to the increased presence of non-commercial traders.

“The magnitude of the changes is quite dramatic and very significant,” Cooper said. “What must be taken into account is what kind of risk you think you have at stake. The magnitudes of the moves are certainly phenomenal. Historical comparisons are thrown out the window.”²²

When risk capital seeking higher returns starts to chase a commodity like natural gas that is relatively fixed in supply and demand in the short and mid terms, it is hard to imagine that it will not have an impact on prices. Most attention was still focused on oil because that was a more mature market, but the effect was seen as spreading to natural gas.

More than 200 hedge funds already play or are set to play in energy commodities markets, and they are primed to bring more risk capital to bear in those markets. Evidence of their trading activities is already speculated to account for the much higher crude oil prices seen in recent months, and some analysts suggest that hedge fund activity may account for up to \$8 per barrel of total price. Additional evidence of their influence has been the 55% growth in open interest on NYMEX crude, heating oil, and gasoline contracts over the past year and the more violent and volatile intraday trading during recent months. What happened in oil has spread to gas, power, and coal.²³

The figure of \$8 per barrel as a “hedge fund activity premium” in oil is a stunning number for mid-2004. It represents approximately 20 percent of the refinery acquisition cost in 2004 and two-thirds of the \$12 increase in refinery acquisition costs between 2002 and 2004. Below, I discuss a study prepared for the U.S. Department of Energy that suggests a disconnect between natural gas energy futures prices and the underlying resource costs of \$2.30 per thousand cubic feet (mcf) of natural gas production costs. This figure is equal to about 20 percent of the natural gas wellhead price in 2006 and over 50 percent of the increase in natural gas wellhead prices between 2002 and 2006.

2. Growing Concerns About Trading

The opportunity to straddle a variety of markets is also being exploited by the new players. They can take positions in lightly regulated exchanges and unregulated over-the-counter markets, directly hold physical assets, and participate as large players in equity markets.

However, even on this front, the oil companies seem to be lagging behind the speculators, as investment banks have already been active buying reserves in the ground.

Many of the existing macro funds pursue long/short commodity trading strategies taking bets in a variety of markets... These funds tend to be larger and well-established with significant assets under management. Many of them are increasing their exposure as the trend in energy prices is upward taking long positions. Some of the macro funds engage in playing the spread between commodity markets and equities going long on energy commodities and short on energy equities for example.

Indeed, early returns suggested for many of these funds from energy commodity trading have been spectacular (one fund that we know of has reported 240% returns to date in 2004) and only serve to attract other macro funds to bet some of their assets in energy markets as well.²⁴

Chasing high profits in the energy sector in markets that lack transparency increases risk, which demands higher returns.

What is readily apparent from all of this activity is that the fund community now sees the energy complex fundamentals trending to higher prices and that it offers them an attractive sector in which to inflate sagging returns for investors.²⁵

Plainly, the entrance of hedge funds is reigniting the energy trading phenomena. By increasing liquidity through the introduction of additional risk capital and by improving the counterparty credit situation with strong balance sheets, the funds are providing the market some positives. However, the lack of detailed physical energy knowledge and reliance on black box models by some in the hedge fund community combined with the lack of visibility into their activities ought to cause some unease and concern. The last thing the energy markets need is yet another speculative trading-led implosion.

Those that get it right most of the time are the multi-national oil companies and the two big investment banks – Morgan Stanley and Goldman Sachs....

Except for a handful of funds, they just can't stack up against the great oil trading companies like Vitol or BP and the investment banks, and since energy trading is a zero sum game, the wealth transfers could be massive. Count on more great quarters for Morgan Stanley's and Goldman Sachs' commodity shops. The other investment banks such as Merrill Lynch, Barclays, Bank of America and Deutsche Bank are now playing catch up.

This prediction of increasing profits made in October 2004 proved quite correct. The bonus pool at Goldman Sachs, one of the key members of the "triangle of trading," has raised some eyebrows. This activity simply cannot be costless.

The bonus pool, as we've heard ad nauseam, is overflowing with some \$11 billion. Mr. Paulson, the chairman and chief executive, alone took home 437 million, or about 800 times the median household income in the United States. Well done. The question is whether all of this is sustainable – and, of course, whether the bank hasn't turned into a huge hedge fund.²⁶

By mid-year 2005, given the lack of regulation and the huge sums of money changing hands, even the most ardent defenders of commodity trading became a little worried.

We see the potential for a looser regulatory regime and collision course with Sarbox passé during the height of media attention on the scandals.... But, actually, pragmatic regulation is a good thing... Government at all levels clearly failed in the Enron/Energy Merchant scandals....

So what's the impact on energy markets? We are fearful of more "unruly" traders starting up their old tricks again. During this spring, one gas trader was front running overnight electronic gas markets on NYMEX's Access, which is a NYMEX vulnerability. We don't see adequate market surveillance and enforcement from either the SEC or the CFTC. We expect more hedge funds to blow up (some already have) in energy commodity trading and unfortunately more phantom and wash trading, i.e. "market manipulation." This goes back to how traders are incited in the first place.

It's really not necessary to create an environment in which criminal activity may flourish again as we are in the midst of the greatest commodity bull market for natural resources of all time. The fundamentals of this demand-driven market will drive us to higher highs and much more price volatility. But a good friend in New York once told me that commodity traders were the "lowest form of life" (he is still one), and I would add New York real estate brokers to that list too. Gordon Gekko, the character in the movie Wall Street, sums it up, "Greed is good." There is never enough money to be made. It has much more to do with ego than money!

We just hope that any further issues don't rain on everyone's parade and that politicians such as Senator Feinstein keep talking and do not take action on real regulation of the OTC derivatives market. If that occurs, all this business will flee to offshore accounts. In fact we are hearing that more and more hedge funds are moving in that direction setting up Cayman Island, Nassau and other vehicles to protect themselves from US financial disclosure. We are in the ramp up stage for energy hedge funds and we are becoming convinced that there is a real business in a "due diligence" service of these startups.²⁷

The NYMEX Henry-Hub natural gas price for May, the month before the above piece was written, averaged a little over \$6.50/mcf. That was just about the average for the first four

months of 2004. For December 2004, it was just under \$7.00. In December 2005, the spot price averaged close to \$14.

Before Hurricane Katrina, the NYMEX futures market had already lost touch with the physical market. Market trends throughout the year were causing consternation among analysts.

First, until the mid-November cold snap, spot prices throughout North America were a minimum of \$1-2/mmbtu below the Henry Hub prices, and as much as \$4-5 lower in the Rockies and points further north and west. While large discounts to spot are common in the Rockies and Western Canada (because of limited take-away and storage capacity), the existence of any discount, let alone a large discount at points like New York Citygate or the Chicago Citygate, is highly unusual. Midwestern and Northeastern discounts to Henry Hub literally mean that if transportation were costless and instantaneous it would be profitable to ship natural gas from the major load centers to Southwest Louisiana.²⁸

With hundreds of billions of dollars at stake and a vital commodity gyrating wildly in price around a dramatic upward trend, one would think that policymakers would examine these markets closely, but that is not the case. As a recent analysis from a hedge fund analysis firm, entitled "Hedge Funds Change Energy Trading," pointed out,

Historically, most hedge fund managers have not been required to register with the U.S. Securities and Exchange Commission (SEC) and, therefore, have not been subject to regular SEC oversight...

Further, hedge funds are not subject to the numerous regulations that apply to mutual funds for the protection of investors, such as those requiring a certain degree of liquidity, the ability to redeem mutual fund shares at any time, the protection against conflicts of interests, assurance of fairness in the pricing of fund shares, disclosure regulation, the limitation in the use of leverage, etc.... The recent SEC financial disclosure requirements are really light-handed regulations used to assuage public concerns over financial markets and have had little impact on hedge fund investment.²⁹

Ironically, for analysts, the unregulated nature of hedge fund trading makes it difficult to estimate how much activity is taking place.

While the CFTC data shows futures and options positions on the NYMEX, it does not reflect the OTC energy markets at all. This is still where most oil and gas trading takes place. Futures dominate short-term trading while the OTC markets dominate the long-term energy markets. Moreover, a trader may be classified as "commercial" in some commodities and as "non-commercial" in others. It has shown a rise in "non-commercial," indicating some of the funds

presence, but quite frankly, funds also trade through banks. We therefore feel that the data is only showing the tip of the iceberg in terms of the real presence of fund trading which will continue to grow.

The relatively secretive and unregulated nature of the funds and their activities help to cloud an assessment of their true level of activity.³⁰

The liquidity provided by the hedge funds is evidenced on the front end of the markets through both NYMEX and IPE oil and gas futures trading, but is much more established in the OTC energy markets. Like the hedge funds themselves, these markets are not price regulated, and have a degree of price opaqueness.³¹

3. A Broader Pattern of Abuse in Energy Markets

Natural gas markets share this pattern of abuse with other energy markets. Unilateral actions by any of a number of individuals in any of a number of circumstances provide a landscape in which upward price movements are probable. "There are regular squeezes in the Brent [oil] market... The whole trick is to collect more money in CFDs [contract for differences] than you lose on the physical squeeze... People seem to do it in turn. It depends on who's smart enough to move in a way nobody notices until it happens."³²

In a case brought by a private party in late 2001, the practical reality was revealed.

Tosco won a settlement claiming that Arcadia Petroleum (a British subsidiary of the Japanese firm Mitsui) engineered an elaborate scheme to manipulate oil prices in September of 2001 through the use of OTC derivatives and a large cash market position to corner the market in Brent crude oil. As a result, the price of Brent crude soared between August 21st and September 5th and pushed its price to a premium over West Texas Intermediate crude oil (WTI)...

Dated Brent, which acts as a price marker for many international grades, is physical crude traded on an informal market, rather than a regulated futures exchange. This lack of regulation poses problems for oil producers and consumers seeking a fair price... A typical Brent squeeze involves a company quietly building a strong position in short-term swaps called contracts for difference, or CFD's, for a differential not reflected in current prices. The company then buys enough cargoes in the dated Brent market to drive the physical price higher, which boosts the CFD differential...

*The Company may lose money on the physical side, but it's more than compensated for by profits on its offsetting paper position in the short-term swaps market.*³³

These abuses persist in markets that are actually more difficult to move than natural gas markets. For example, in January 2006, the CFTC reported a settlement in oil trading:

The CFTC said that it found that, on at least five occasions from November 2003 to March 2004, traders for Houston-based Shell U.S. Trading & Shipping Co. executed prearranged and noncompetitive trades in crude-oil futures contracts in violation of exchange rules. In each instance, the regulator found, Shell traders agreed to swap a prearranged quantity of oil-futures contracts in the same month...

The CFTC said that none of the prearranged trades included prior agreements on pricing for the contracts, thus distinguishing the transactions from so-called round-trip, or wash, trades...

Heavy wash trading in the natural gas market in the U.S. earlier in this decade undermined the credibility of that market. Oil-futures, however, are more liquid, making it much more difficult for isolated trades to distort prices. In late 2003, BP PLC agreed to a record \$2.5 million fine with NYMEX, settling charges of improper crude oil trading, including wash trading.³⁴

Well after the headlines died down, this type of trading continues. Note that the parent corporations of the two entities mentioned in these complaints are two of the largest natural gas marketers, who account for almost one-third of the gas marketed in the U.S. *The Wall Street Journal* noted that the settlement of “the fines come at a time of popular resentment over steep energy prices.”³⁵

C. MOVING MARKETS: THEORY AND PRACTICE

Manipulation of markets receives a great deal of press attention and has been a prominent feature of energy markets in recent years, while the legal literature focuses on manipulation very narrowly defined as “the exercise of monopoly or monopsony power in a futures market (or more generally a derivative securities market) and/or the cash market for the underlying commodity near the expiration date of the future (derivative security).”³⁶ However, there is a broader range of behaviors that are a concern.

Manipulation in the commodity futures markets takes many forms. They may be manipulated through rumors or false information conveyed in the market. Prices may also be manipulated through rigged trades or the use of “capping” or “pegging,” by which market prices are set at artificial levels for margin purposes, price setting and other reasons.³⁷

Whether or not all of these behaviors violate some statute, they can have an effect on prices and pricing behaviors. In fact, virtually every one of this list of horrors has been alleged to have occurred in energy markets in the past decade, as illustrated by consent

decrees, fines and court cases. Given the importance of natural gas as a commodity and its inherent vulnerability, a very broad range of practices that can move prices should be a concern. Thus it is important to identify different categories of behavior and “[I]t is essential to distinguish the exercise of market power near expiration of a futures contract from the effect of large trades that move prices.”³⁸ Moreover, circumstances in which traders can exploit shortages should also be a source of concern.³⁹

The important point, however, is not that these behaviors take place, but that the structural conditions that make them possible are very deeply engrained in energy markets and have a broad impact on prices. The factors identified as making manipulation more or less likely also enable other malevolent behavior while making markets more susceptible to price peaks. There are a variety of structural and behavioral ways that financial commodity markets can push prices up. Volatility and churn can be costly. Brokers take fees and traders take a spread on every transaction. Volatility increases risk, which then demands rewards. Producers, in turn, want volatility insurance. If each of these factors creates a small increase in price, it adds up to substantial increases given the amount of money involved.

Other structural factors may play a part in raising the consumer’s price. Different players enter the market with different incentives and under different constraints. While there is a winner for every loser, it may well be that those who are in the market to procure gas for actual consumption are at a disadvantage. They need to keep the house warm, while financial players are only in it for the money. Given the experience of recent years, the ability to move the market, legally or illegally, simply cannot be dismissed. The line between what is legal and illegal is quite unclear.

The underlying dynamic in the natural gas market is between physical consumers, who are short – they need to buy supply to keep the house warm – and the physical and financial seller, who are long. They have commodities, or promises that they will deliver them.

Shorts must pay current owners of the commodity increasingly higher prices in order to compensate current owners of the commodity for the surplus foregone.

When friction exists, shorts must bid up the price in order to increase the number of deliveries as the current owners of the commodity anticipate that they will incur search costs themselves or forgo some consumption.⁴⁰

Volatility and volume, which are lauded as a demonstration of liquidity in the markets, also have a dark side. They open the door to abuse.

In a commodity futures market in contrast, the victims of market power create their own downfall by trading with the manipulator; if they did not trade with him on a large scale, he could not accumulate the large positions that allow him to exploit frictions in the delivery end game.⁴¹

[A] trader who does not possess any informational advantage is able to acquire market power as long as the flow of the orders from other traders to the futures market is sufficiently volatile and large relative to the size of deliverable supply... Put another way, the existence of “noise traders” makes fraud possible.⁴²

Volatility also raises the cost of gas by building in a premium.

Increased volatility increases the value of producers’ *operating options*, options to produce now (at an “exercise price” equal to marginal production cost and with a “payoff” equal to the spot price), rather than waiting for possible increases or decreases in price. These options add an opportunity cost to current production: namely, the costs of exercising the options rather than preserving them. This and increase in volatility increases the opportunity cost of current production.⁴³

The extreme volatility of the market and its vulnerability to price spikes, exploitation of tight conditions, and manipulation can be seen in the reaction to news and events. “Volatility around the time that the gas storage report is released is considerably greater than normal.”⁴⁴ We should not forget that “normal” in natural gas is an already high level of volatility. In 2004 there was a notorious incident in which a misreported storage number drove prices up sharply.⁴⁵ Although the Federal Energy Regulatory Commission concluded that the mistake had been inadvertent, it underscores how vulnerable these markets are.

There are strands in the technical literature, particularly on energy, which support a number of propositions that lie at the core of the concern about the recent behavior of the natural gas market. These markets are inefficient, allowing supranormal trading profits.⁴⁶ Increases in volatility lead to higher risk premiums.⁴⁷ Increased volatility results in lower production as producers exercise their option to hold assets in the ground.⁴⁸ Increases in volatility drive spot prices farther above futures prices.⁴⁹

This is not to suggest that there is unanimity in these interpretations. Indeed, the technical analysis of natural gas prices is all over the map:

- positive and negative net hedges,⁵⁰
- positive and negative betas,⁵¹
- efficiency and inefficiency in price discovery.⁵²

In short, the technical literature sheds little light on how this market works. The important point here is that one cannot assume that the market is “working” just because it is a market. There are structural conditions that may impose inefficient and unnecessary costs on consumers, exploitation of tight markets, and opportunities for abuse.

This basic proposition is true of the broader literature on financial markets. There are strands in this literature that identify potential and actual abusive practices. Many of these are directly relevant to the natural gas market, including:

- manipulation facilitated by large positions⁵³
- lack of transparency,⁵⁴
- structural advantages enjoyed by large traders,⁵⁵
- the exercise of market power,⁵⁶
- insider trading⁵⁷ and self-dealing,⁵⁸
- trading practices that accelerate market trends,⁵⁹ perhaps causing them to overshoot.⁶⁰

The academic literature focuses on fairly sophisticated transactions.

Cash-settled derivative contracts are susceptible to manipulation. Manipulative traders may profit by taking large positions in the contract and manipulating the underlying cash settlement price. Whether such manipulations would be profitable depends on whether the cost of manipulating prices in the underlying markets are less than the benefits of making favorable cash settlements.

The citations above come from an article that makes the case that position limits are necessary in these markets on the basis of very sophisticated situations in which surveillance will be a challenge. These manipulations rest on taking sophisticated contrary positions in different markets. Actions that appear as losses in one market are actually more than compensated by gains in another market. The complex types of manipulation that this sophisticated analysis identifies are different from the more blatant types of manipulation that attract headlines. The support for limits stems from the fact that oversight alone cannot detect abusive trading practices. The complex theory is as follows:

If manipulations were easily identified, increasing surveillance efforts would be sufficient to reduce manipulations by increasing the probability of detection and subsequent prosecution with regard to the narrow-based derivative contracts. Successful prosecution of manipulation, however, is difficult, because prosecutors must prove manipulative intent (*scienter*). Manipulators may avoid liability by offering plausible alternative explanations for their trading in the underlying securities. The most plausible such alternative is that they traded the underlying securities before expiration to ensure that they would not lose their economic positions in the underlying risks when the contracts expired. Because this explanation generally is plausible, surveillance

coupled with prosecution may not provide an adequate safeguard against true manipulation.⁶¹

Position limits directly limit manipulation by limiting the size of derivative positions that would benefit from manipulative practices. Position limits can potentially improve economic efficiency by reducing manipulation in a less costly manner than surveillance alone. However, they can be set too high or too low.⁶²

Unregulated markets make the problem particularly acute. With huge sums being traded in these unregulated markets, regulators do not know what is going on. It is also the case that trading, even without manipulation, can have negative effects on the market and specific types of players therein.

Even when the settlements of cash-settled contracts are not purposefully manipulated, the settlement mechanism may increase underlying volatility when hedgers unwind their hedges if they have no incentive to control their trading costs. This generally is the case when hedgers trade out of their positions at the same prices that determine the final cash settlement price. The resulting price uncertainty reduces trading by risk-averse producers and thus produces deadweight losses.⁶³

While analysts tend to disregard the wealth transfers and focus on macro efficiencies, the transfers matter a great deal to residential consumers. Similarly, if the agents of residential consumers, local distribution utilities, are the risk-averse players in the market, consumers will bear the burden of their loss as well.

ENDNOTES

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